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ABSTRACT

A random sample of 111 industry representatives from 4 standard metropolitan areas in Pennsylvania offered opinions on how to improve critical aspects of vocational education in the state. Employers gathered at one of four sites and dealt with questions regarding students' basic skills, technical job skills, and job attitudes. Group discussions and questionnaires were used to identify and rank priority recommendations. Among all participants was a highly significant level of agreement on the priority recommendations and their rankings. Responses to the basic skills issue highlighted the need for reinforcement of basic skills in vocational education, emphasis on basic skills in earlier grades, and greater emphasis on vocational awareness by guidance counselors. The priority recommendations for technical skills emphasized the need for technological updating of teachers and curriculum upgrading. The job attitudes issue evoked responses emphasizing the need for students to understand the free enterprise system, for teacher updating, and for work site simulations. Three recommendations were constructed: (1) vocational educators should review successful programs for possible implementation; (2) vocational educators should assess the roles of all groups that could have an impact on vocational programs; and (3) more deliberate collaboration must be developed between educators and business and industry representatives. (Appendixes, amounting to approximately one-half of the report, include correspondence, materials from meetings, and instruments.) (YLB)

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Soliciting Industry's Opinions for Improving Vocational Education

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ABSTRACT

Soliciting Industry's Opinions for Improving Vocational Education

The purpose of this study was to obtain information on employers' views toward vocational education. A random sample of 111 employers from the Pittsburgh, Reading, Northeast and Allentown-Bethlehem-Easton SMSA's were invited to attend two-and-one-half-hour meetings to discuss their suggestions for improving three fundamental issues in vocational education. Employers were asked to answer to the following:

1. What can vocational education do to improve the basic skills of students?

2. What can vocational education do to improve the technical job skills of students?

3. What can vocational education do to improve the job attitudes of students?

A modified Nominal Group Technique was used to determine the opinions of the small groups about the means of improving vocational education. Later a modified Delphi Technique was used to rerank the priority recommendations for the established recommendations from all sites.

The findings of the study indicated a high level of agreement among employers on how best to improve vocational education. Priority recommendations were ranked, however, all recommendations were concluded to be significantly important in the pursuit of quality vocational education programming in Pennsylvania.

Answers to the basic skills question repeatedly demonstrated the need for earlier proficiency before entering a vocational course and vocational educators should be more concerned with the reinforcement of basic skills. It was also indicated that proficiency should occur earlier in the educational process and guidance counselors need more emphasis on vocational awareness.

The technical job skills questions illicited much concern about the need for technological updating of vocational teachers and curriculum upgrading. Also, the employers expressed the necessity for broad based vocational programs at the secondary level while specialization should be fostered at the postsecondary level. In addition, vocational teachers should better understand methods for teaching vocational education.

The job attitudes question responses emphasized the need for students to understand the free enterprise system. The American way of doing business was felt to be an important ingredient of vocational programs. Again, the idea of emphasizing technological updating for teachers was emphasized as well as having the curriculum more accurately simulate work site experiences.

Three recommendations were constructed on the basis of employer opinions:

-- Vocational educators should review existing programs that have been successful and impact the identified suggestions for improving vocational education.

-- Vocational educators should assess the roles of all groups that could impact on vocational programs particularly: labor, commerce and state departments of education, teacher education, postsecondary educators, secondary educators, industry, and other significant groups that are interested in vocational education.

-- Finally, more deliberate collaboration must be developed between educators and business and industry representatives.

The employers who participated in the meetings resoundingly expressed interest and concern in the ways and means of improving vocational education. These meetings reflected industrys' willingness to collaborate and share in the partnership for the development and improvement of vocational programming. Industry exists as a viable resource to enhance the delivery of vocational education in Pennsylvania. Their willingness and concern should be harnessed, developed, and promoted for the common good of both industry and education.

ACKNOWLEDGEMENTS

The cooperation of many individuals has been recognized as the vital link in the success of this project. The project staff particularly appreciates the cooperation of the employers who generously gave of their time and openness to express their concerns for improving the delivery of vocational education in Pennsylvania. Also, appreciation must be extended to those individuals who hosted the meetings at the four sites: Dr. Gary Wright; director of training, Met-Ed, Reading, Pennsylvania; Mr. Jack Heiney, U. G. I. Corporation, Bethlehem, Pennsylvania; Ms. Carol Skrzysowski, personnel specialist, Pomeroy's Department Store, Wilkes-Barre, Pennsylvania; and Mr. Robert McCall, assistant executive director, Construction Advancement Program, Building Industry Center, Pittsburgh, Pennsylvania.

In addition, a special thank you must be extended to the staff from the National Center for Vocational Education Research at The Ohio State University for their support and guidance in the development of this project especially, Dr. Stephen J. Franchak.

Finally, a note of thanks is extended to the staff of the vocational technical schools and community colleges who provided employer lists for identifying participants for the study.

INTRODUCTION

Burgeoning reform in the educational community requires tender nurturing to assure "excellence" against the so called tide of "mediocrity." Administrators, teachers, parents, students and entire communities react to differentiating needs and concerns in prescribing improvements in the effective delivery of high quality educational programs. Seeley (1981) noted that the emphasis for school improvement must focus on partnership rather than school services and standards. Cyphert and Grant (1971) noted that "if schools of education are to increase their effectiveness, they need to give fresh attention to the clarification and ordering of their goals...without ignoring persons outside the organization" (p. 272). Thus, it would appear to some that the efficacy of reform hinges on the collaborative efforts of all individuals to promote and deliver quality education.

Vocational education in particular has been challenged to respond to complex social and economic needs of society. Despite contemporary vocational and educational legislation that mandates social reform through education, the economic promises of vocational education continue to generate the greatest hope for increased opportunity through vocational education. The industrial community played an instrumental role in the development of the Smith-Hughes Act of 1917. However, in recent years the industrial community has shown decreasing interest in vocational education lobbying (Becker, 1982). Communication channels must be reopened for collaboration on identifying goals and ways of delivering quality vocational education.

Numerous and conflicting priorities have diversified the goals and direction of vocational education. Compounded by the rapid rate of change impacting all segments of society, it has become increasingly difficult to identify the specific problems of vocational education. This project sought to identify broad issues that have predominantly troubled vocational educators and business and industry representatives. The voices of the business, industry, and labor communities must be heard to guarantee that the objectives of vocational education are fulfilled. This study is being conducted in conjunction with another Pennsylvania Department of Education mail survey of over 1,000 employers in Pennsylvania (Lewis, 1984) which surveyed employers' views of vocational education. The purpose of this study was to determine employers' opinions of vocational education, their views on collaborating with vocational education and what vocational education should be doing. This study represents a joint effort by staff from the Pennsylvania Bureau of Vocational and Adult Education and the Professional Personnel Development Center for Vocational Teacher Education at The Pennsylvania State University.

Objectives

The primary objective of this study was to obtain business and industry's opinions on how to improve critical aspects of vocational education in Pennsylvania. The specific objectives included the following:

1. To determine employers' views regarding selected critical issues facing vocational education in Pennsylvania.

2. To make recommendations, based on employers' views, on how to resolve critical issues facing vocational education.

Three broad recommendations for vocational educators have been developed from the summary of employers' views presented during the meetings with employers.

PROCEDURES

The procedures for the project were designed to accomplish the stated objectives with the emphasis on methodically gathering opinions from business and industry representatives for identifying recommendations for improving vocational education. The following information describes the method for selecting critical issues facing vocational education; study sample; selection of meeting sites; invitation to employers; and response to invitation; facilitator training, and data collection.

Identification of Critical Issues Facing Vocational Education in Pennsylvania

The first step in identifying critical issues facing vocational education in the Commonwealth was to examine the Governor's--Turning the Tide: An Agenda for Excellence in Pennsylvania Schools (1983). Important issues stated in this plan centered on staff and program updating and increased requirements for graduation. Other documents reviewed were the Pennsylvania Annual and Five-Year Plan for Vocational Education (1982). In addition to these documents, a careful search was conducted to locate similar studies by other agencies. The next step was to construct questions based on the most important issues identified for vocational education. The research team met with staff from the National Center for Research in Vocational Education, The Ohio State University, Columbus, Ohio, and some local Ohio employers for the purpose of refining and field testing the questions.

Finally, two graduate assistants and three staff members from the Vocational Professional Personnel Development Center for Vocational Education, The Pennsylvania State University, were assigned to develop descriptors for each question. The following questions and descriptors were developed:

1. How can vocational educators improve the teaching of basic skills?

   What basic skills should be taught?
   Methods of delivering basic skills.
   Vocational student guidance.
   Teacher (staff) development.

2. How can vocational educators improve the technical job skills of students?

   What job skills should be taught?
   Methods of delivering technical job skills.
   Vocational student guidance.
   Teacher (staff) development.

3. How can vocational educators improve job attitudes of students?

   Reliability
   Trustworthiness
   Loyalty
   Perseverance
   Interpersonal relations
   Safety attitudes

Sample

The population for this study included employers from the 16 Standard Metropolitan Statistical Areas (SMSA's) in Pennsylvania. From the 16 SMSA's, four were randomly selected to participate in the study. To assure that either the Pittsburgh or Philadelphia SMSA was represented, a separate random drawing was done. The random selections for the study resulted in the following SMSA's--Reading; Allentown, Bethlehem, Easton; Northeast; and Pittsburgh.

Within each SMSA, a random sample of AVTS's and community colleges were asked to submit their active employer list for use in the study. In addition, a random sample of employers was drawn for each SMSA by type and size of industry listed in the Harris Pennsylvania Industrial Directory 1983-84 (see Table 1). The vocational schools randomly selected within each SMSA were asked to submit their active employer lists (see Table 2).

TABLE 1
NUMBER AND SOURCE OF EMPLOYERS

SMSA	Harris Directory	Vocational School	Totals
Reading	131	30	161
Allentown, Bethlehem and Easton	70	15	85
Northeast	60	30	90
Pittsburgh	126	30	156
TOTAL	387	105	492

Selection of Meeting Sites

Local vocational school directors in each SMSA selected were asked to recommend sites for the employer meetings that met the following criteria: Large enough to accommodate 50 people or more in one room, ample parking, centrally located and owned or operated by a private employer. All of the sites recommended met the criteria and agreed to host the meeting. The sites selected were: Met-Ed, Reading; UGI Building, Bethlehem; Pomeroy's Community Room, Wilkes-Barre; and Building Industry Center, Pittsburgh.

Invitation to Employers

Each participant was invited by letter in January 1984 to attend the meeting in the appropriate labor market area. The letter included the purpose of the project, time and location of the meeting and a confirmation form. (Appendix A)

TABLE 2
LOCAL VOCATIONAL SCHOOL EMPLOYER LISTINGS
BY STANDARD METROPOLITAN STATISTICAL AREAS

Standard Metropolitan Statistical Area	Vocational School
Reading	Reading-Muhlenberg AVTS
Allentown, Bethlehem and Easton	Bethlehem and Eastern Northampton AVTS
Northeast	Wilkes-Barre AVTS and Luzerne County Community College
Pittsburgh	Parkway West AVTS and Allegheny County Community College

Response to Invitation

Table 3 shows that 24 percent (N = 111) of the employers that were invited actually attended one of the meetings. Almost all of the employers who returned the registration form kept the commitment to attend the meeting in their SMSA.

TABLE 3
EMPLOYER RESPONSE

SMSA	Mailed	Non-Deliverable	Returned Registration Form	Percent	Actually Attended	Percent
Reading	161	5	35	22	34	22
Allentown, Bethlehem and Easton	85	3	14	17	15	18
Northeast	90	6	22	26	28	33
Pittsburgh	156	5	42	28	34	23
TOTAL	492	19	113	24	111	24

Facilitator Training

Prior to the meetings in the SMSA's, four facilitators were trained by the project directors to use the modified Nominal Group Technique. Facilitators were assigned one of the three major questions to be addressed in the meetings. Two graduate assistants and two faculty members from The Pennsylvania State University served as the meeting facilitators. They were encouraged to minimize their input into the dialogue at the meetings in order to eliminate facilitator bias in the group discussions. Facilitators did not attempt to defend criticisms of vocational education, but rather emphasized the need for specific suggestions to foster change.

Data Collection

At each site participants received the same packets of information in three different colored folders. Following introductory remarks about the agenda (Appendix B), participants were then asked to form, by color of the packets, three small groups. Each group proceeded to address one of the major questions identified in their packets.

Each small group represented one-third of the employers in attendance and were randomly assigned by their color coded packets distributed at the registration table. Members were assigned the major question for their group.

While in the small groups, a PSU facilitator led the discussion by using a modified Nominal Group Technique to elicit unbiased responses from participants. Facilitator responsibilities focused on recording the responses. The modified Nominal Group Technique consisted of six steps:

1. Have each person in your small group write down how he or she would answer the question.

2. Give each person the opportunity to respond to the question before the small group.

3. List the responses and get consensus from the small group.

4. Rank order the responses and get consensus from the small group by using Positive Statements Only.

5. Meet as a committee of the whole and go over each group's rank ordered response list for the three different questions.

6. Point out to the large group that they may list any comments they have about the other two questions not addressed in their group on the sheet of paper in their folder and mail it back to us in the self-addressed envelope found in their folder.

Included in the packet were self-addressed stamped envelopes and a note asking employers to send the additional comments or concerns not covered in the meeting (Appendix C).

A modified Delphi Technique was used after the initial meetings to determine the level of agreement about the ranking of the priority recommendations. Facilitators summarized

priority recommendations from all four of the meetings without ranking the responses, thus enabling a general consensus of all group responses from each meeting.

Following the four meetings, all participants were mailed three lists of priorities for each major question for improving vocational education. Not only were participants asked to rerank the responses dealing with their group's question, but they also were asked to rank the recommendations for the other two major questions. This method was used to increase the validity of the final rankings in establishing a consensus of the recommendations. All four meeting site participants received the same three lists of recommendations (Appendix D). Employers were asked to return their ranked recommendations by mail eliminating the need for another gathering to reconsider rankings.

Each participant was asked to rank all the items in each category (basic, technical, and job attitude) from highest priority to the lowest priority with "1" indicating highest priority. The priority ranking was then summed and divided by the total number of participants ranking the item. The item descriptions and means are reported in table form in the analysis section of this report.

A Spearman Rank Correlation coefficient was generated using a program from the Statistical Package for the Social Sciences (SPSS). This statistic was employed to determine if participants who discussed the items ranked it similarly to those who did not discuss the item. All comparisons betwen ranking were highly correlated. These data are also reported in the section on data analysis of this report.

ANALYSIS

OBJECTIVE 1: TO DETERMINE EMPLOYERS' VIEWS REGARDING SELECTED CRITICAL ISSUES FACING VOCATIONAL EDUCATION IN PENNSYLVANIA.

When interpreting the results of the study, it should be pointed out that all sample surveys are subject to sampling error; that is, the extent to which the results may differ from what would be obtained if the whole population of employers in Pennsylvania had been surveyed. The extent of the sampling error depends largely on the number of surveys mailed. As reported in Table 3, there were 492 surveys mailed and 111 returned. In terms of sampling error, this means that at the .05 level of significance there was a sampling error of plus or minus four points. In other words, it is very probable (95 chances out of 100) the average of repeated sampling would be somewhere between plus or minus four percentage points.

The three sets of responses resulting from the four meetings were reranked and tabulated to establish a consensus of ranked recommendations for the areas of basic skills, technical skills and job attitude improvement in vocational education programs. Each of the three topics was treated individually; however, responses were correlated among the groups that discussed the question and the groups that did not discuss the questions at the meeting sites. The rankings determined from the modified Delphi Technique resulted in the rankings found in Tables 4, 6, and 8 for each question. When looking at the correlation coefficients among the discussion and the non-discussion groups, there was almost total agreement among the discussion and non-discussion groups of employers. This indicates that there were minimal psychological factors that influenced the opinions of the different individuals and groups. All of the correlations coefficients indicated that all responses were significant to the .05 level.

Basic Skills

The question focusing on basic skills by the discussion groups in each of the four sites dealt with how vocational educators can improve the teaching of basic skills. Eleven concerns were identified from the four sites and later ranked by both the treatment and control groups (see Table 4). The highest ranked recommendation centered on the need for students to receive earlier mastery in basic skills with vocational programs being used as a source of reinforcement to the basic skills taught in earlier grades.

The second recommendation focused on the need for remediation of basic skills prior to entering vocational education programs. The Pennsylvania Department of Education's 1984 plan for the development of the Testing for Essential Learning and Literacy Skills (TELLS) to identify low achieving students in third, fifth and eighth grades will soon address this recommendation which is related to the third ranked recommendation that remediation begin earlier in the schooling of all students.

The discussion group ranked the need for basic skills homogeneously as can be seen by the mean item ranking of 2.72, which was less than half of the ranking for the number two item found in Table 4. Additionally, the ranking indicated that aptitude and achievement tests are looked upon favorably by the participants. Although the eleventh item promoting more broad based vocational programs at the secondary level was ranked last, all items listed were carefully considered and included as priority needs for improving vocational education.

TABLE 4
NUMERICAL RANKING OF BASIC SKILLS RECOMMENDATIONS (N = 70)

RECOMMENDATIONS	Group Ranking					
	Basic[a] (N = 29)		Technical[b] (N = 23)		Job Attitudes[b] (N = 18)	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Basic skills need to be emphasized earlier in the students' schooling. The role of vocational education should be the reinforcement of the basic skills of reading, writing and math, which were taught in earlier grades.	2.72	1	2.45	1	2.50	1
Remediation programs for basic skills development need to be designed into the education programs.	5.21	2	4.78	3	5.44	5
Aptitude and achievement tests should be used periodically throughout the students' schooling to identify needs for remediation earlier.	5.21	3	5.56	4	5.11	3
Guidance counselors need to increase efforts in delivering vocational awareness programs. More highly qualified students must be encouraged into vocational programs.	6.82	9	5.74	7	6.33	7
Vocational teachers must continually upgrade their own basic "technical" skills. Closer cooperation with industry through summer intern programs and technical updating workshops will greatly aid teachers in their efforts to keep their courses up to date with the industry.	5.55	4	4.52	2	4.78	2
Public awareness programs directed toward parents should be developed to explain the needs of today's workers and how they have changed over a generation. These public awareness programs must promote the idea that vocational students are not "second class" students.	5.82	6	5.56	4	7.28	9

TABLE 4 (CONTINUED)
NUMERICAL RANKING OF BASIC SKILLS RECOMMENDATIONS (N= 70)

RECOMMENDATIONS	Group Ranking					
	Basic[a] (N = 29)		Technical[b] (N = 23)		Job Attitudes[b] (N = 18)	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Teachers need to be supervised more closely at all grade levels to assure better articulation between the various sections of courses. The courses need to be designed so that nothing "fal's through the cracks" as students proceed from one grade level to another.	6.76	8	6.61	8	6.72	8
Advisory councils should exert more influence on basic skill requirements and pay more attention to industry's recommendations.	7.90	10	8.83	10	8.39	11
Teachers and supervisors should be held accountable for student mastery of basic skills prior to entry into vocational programs just as vocational teachers and vocational supervisors should be held accountable for mastery of vocational and technical skills.	6.31	7	6.87	9	6.17	6
Development of thinking skills, problem solving techniques and communication skills should be considered basic to every vocational program and adjustments should be made to vocational curricula to reflect their importance.	5.62	5	6.70	6	5.11	3
Vocational programs should strive toward a broader base in the area of technical skills development so as to not limit the potential employability of students. Specific technical training should be left to the employers.	8.07	11	9.39	11	8.17	10

Note. [a]Participants in the basic groups discussed recommendations.

[b]Participants in the Technical and Job Attitudes groups did not discuss the recommendations.

Also, all of the item means were correlated among the discussion and non-discussion groups. All of the correlation coefficients were significant at the .01 level for the ranking items concerning basic skills (Table 5).

TABLE 5
CORRELATION COEFFICIENTS AMONG DISCUSSION GROUP (BASIC), AND NON-DISCUSSION GROUPS (TECHNICAL AND JOB ATTITUDES)

	Group Responses		
Ranking of Recommendations	Basic	Technical	Job Attitudes
Basic Skills Recommendations	1.000	.9337	.9283

Industry representatives resoundingly stated that vocational students require basic skills in order to tackle the experience of occupational training. Perhaps the most unique consideration expounded by industry personnel was the need for parental/public awareness programs about vocational education not being a second class form of education. Federally endorsed vocational student organizations serve as instructional tools to promote attributes needed in the workplace and their activities are widely publicized. Vocational student organization programs can be developed to promote understanding and awareness.

Technical Skills

The second question industry employers were asked to consider was, "how can vocational educators improve the technical job skills of students?" Employers were asked to consider: job skills that should be taught; methods of delivering technical job skills; vocational student guidance and teacher (staff development).

Each small group from the four sites discussed ways of delivering technical skills at the secondary level. Participants at each site contributed suggestions based on their own particular experiences and needs.

Technological updating was clearly identified as a high priority by all groups which offered a variety of strategies for updating. Possible strategies included seminars, workshops and on-the-job (OJT) training within industry.

The second ranked priority was to encourage better prepared students to enter into vocational programs. Among the recommendations was an emphasis on prevocational orientation, entrance requirements, more guidance about vocational courses and more course requirements for understanding labor market trends. The notion was that students need more information about vocational selections and short- and long range implications.

The third priority goal highlighted in Table 6 is the need for vocational teachers to be pedagogically updated as well as technologically updated. The emphasis was on teacher preparation needs to foster teachers as "brokers" who can effectively use community resources to enhance their programs.

TABLE 6
NUMERICAL RANKING OF TECHNICAL JOB SKILLS RECOMMENDATIONS

RECOMMENDATIONS	Group Ranking					
	Basic[b] (N = 22)		Technical[a] (N = 25)		Job Attitudes[b] (N = 24)	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Technological updating--teachers should be required to regularly participate in technical skill development through seminars, workshops and OJT within industry. Further, teachers should actively seek and promote industry involvement within the school in order to conduct ongoing job and trade analysis.	2.71	1	2.77	1	2.33	1
Better prepared students--students should be subject to prevocational orientation, entrance requirements, more guidance about vocational courses and courses dealing with labor market trends.	2.88	2	2.77	1	2.92	2
Curriculum upgrading--the curriculum should accurately reflect local labor market needs.	3.92	5	3.91	5	4.21	5
More teacher preparation--not only should teachers be required to be technologically current, but they should also better understand the methods for delivering vocational education. There should be an emphasis on teachers as "brokers" of information and resources.	3.72	4	3.77	4	3.67	3
Emphasize basic technical skills at secondary level, emphasize specialization at the postsecondary level--the secondary vocational curriculum should develop basic technical skills rather than a high degree of specialization. Specialization should be fostered at the postsecondary level. Basic reading and math skills should be reinforced as technical skills.	3.56	3	3.45	3	4.04	4

TABLE 6 (CONTINUED)
NUMERICAL RANKING OF TECHNICAL JOB SKILLS RECOMMENDATIONS

RECOMMENDATIONS	Group Ranking					
	Basic[b] (N = 22)		Technical[a] (N = 25)		Job Attitudes[b] (N = 24)	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Development of leadership skills--students should understand the processes of advancement, high standards, team work on the job and the need for lifelong learning.	4.92	6	5.23	6	4.87	6
Computer literacy skills--minimally, students and teachers should understand the impact of computers on their occupational area. They should at least be aware of the types of computers used in their trade area.	6.28	7	6.09	7	5.96	7

Note. [a]Participants in the Technical Group discussed recommendations.

[b]Participants in the Basic and Job Attitudes Groups did not discuss the recommendations.

The fourth priority goal emphasized the need for broad based vocational curriculums, while specialization should be emphasized at the postsecondary level. Further, reading and math skills should be reinforced in the secondary curriculum.

Curriculum upgrading was ranked as the fifth priority goal and the emphasis was placed on updating curriculum to reflect local needs. The sixth priority goal illustrated industry representatives' value for the development of leadership skills. Included in this area was the need for students to understand processes of advancement, high standards, team work and the need for lifelong learning.

Finally, the seventh priority goal demonstrated a concern for computer literacy skills for vocational students. Minimally, students should understand the impact of computers on their occupational area.

Each of the seven priority goals was common to all four groups interviewed. The rankings are based on the summarized rankings of all four groups. Although ranked, each goal was identified as a major concern for the improvement of delivering technical skills at the secondary level.

Table 7 illustrates the relationship among the Treatment Group rankings and Control Group 1 and Control Group 2 rankings. The correlation coefficients indicate that the responses were significant to .01 level. There was a high level of agreement among all participants about the importance of rankings of the items.

TABLE 7
CORRELATION COEFFICIENTS AMONG DISCUSSION GROUP (TECHNICAL), AND NON-DISCUSSION GROUPS (BASIC AND JOB ATTITUDES)

Ranking of Recommendations	Group Responses		
	Technical	Basic	Job Attitudes
Technical Skills Recommendations	1.000	.9914	.9558

Job Attitudes

The third major question addressed during the meetings focused on how vocational educators might improve the job attitudes of students. From the four meetings, eight recommendations were recommended. Again, these items were ranked, but all items were considered priority items for improving job attitudes through vocational programming.

The highest ranked recommendation concerned the necessity for students to understand the free enterprise system which included the concepts of profit, productivity, processes and procedures essential to business and industry. The American way of doing business was felt to be an important aspect of vocational programs.

The two second ranked recommendations highlighted the need for teachers to continually upgrade themselves to do a better job. The idea of upgrading involved both the improvement of teaching skills and technical competence. Increased technical competence was suggested by utilizing industry training and work ethic and management programs to improve job attitudes. Related to these suggestions was the other second ranked suggestion for fostering curriculum/worksite simulations which include the development of curriculum and educational facilities to be as similar to the work place as possible.

The two fourth ranked recommendations emphasized the need for industry involvement by utilizing industry resources for guest speakers, field trips, programs, information and guidance. The emphasis on guidance promoted improving the coordination of educational and occupational guidance. Included under these items of recommendations was for more planned involvement of parents in the educational process. Finally, the need for job hunting skills and the use of youth organizations were considered two of the priority recommendations. Youth organizations were seen as an instrument for backing leadership and job related attitudes.

All of the eight recommendations were ranked by the discussion and non-discussion groups from each of the four meetings. Table 8 illustrates the ranking of all recommendations. The correlation coefficients demonstrating the level of agreement was at the .05 level (Table 9).

TABLE 8

NUMERICAL RANKING OF JOB ATTITUDES RECOMMENDATIONS (N = 70)

RECOMMENDATIONS	Group Ranking					
	Basic[a] (N = 29)		Technical[b] (N = 23)		Job Attitudes[b] (N = 18)	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Understand the Free Enterprise System, which includes an understanding of profit, productivity, processes and procedures essential to business and industry.	3.64	2	3.95	3	2.44	1
Teacher updating, which involves the improvement of teaching skills and competence through utilization of industry training, work ethic and management programs to improve job attitudes.	4.32	1	3.40	2	3.20	2
Curriculum/worksite simulations, which includes the development of curriculum and educational facilities to be as similar to the work place as possible	4.32	5	3.40	2	3.20	2
Industry involvement by utilizing industrial resources for guest speakers, fieldtrips, programs, information and guidance.	4.08	4	4.70	4	4.76	4
Job "hunting skills", which includes the procedures used to successfully seek and secure employment.	4.84	6	5.50	7	5.84	7
Parental involvement, including the development of programs for increased involvement in the education and guidance of their children as well as promoting a better understanding of vocational education.	3.80	3	4.85	5	5.24	6
Guidance, which includes improved procedures for educational and occupational guidance and placement.	5.40	7	4.90	6	4.76	4

TABLE 8 (CONTINUED)
NUMERICAL RANKING OF JOB ATTITUDES RECOMMENDATIONS

RECOMMENDATIONS	Group Ranking					
	Basic[b] (N = 25)		Technical[b] (N = 20)		Job Attitudes[a] (N = 25)	
	$\bar{X}$	Rank	$\bar{X}$	Rank	$\bar{X}$	Rank
Youth organizations, which includes the development and utilization of organizations within school programs for the promotion of leadership and job related attitudes.	6.72	8	5.50	7	6.56	8

Note. [a]Participants in the Job Attitudes groups discussed recommendations.

[b]Participants in the Basic and Technical groups did not discuss the recommendations.

TABLE 9
CORRELATION COEFFICIENTS AMONG DISCUSSION GROUP (JOB ATTITUDES) AND NON-DISCUSSION GROUPS (BASIC AND TECHNICAL)

Ranking of Recommendations	Group Responses		
	Job Attitudes	Basic	Technical
Job Attitudes	1.000	.7339	.9062

OBJECTIVE 2: TO MAKE RECOMMENDATIONS BASED ON EMPLOYERS' VIEW FOR SELECTED CRITICAL ISSUES FACING VOCATIONAL EDUCATION.

Recommendation 1

A variety of exemplary model programs exist that could impact the specific recommendations. These programs and others should be reviewed and considered for implementation or adaptation for improving basic skills, technical skills and job attitudes according to local needs. The following programs are examples of exemplary programs available for each of the major critical issues.

Basic Skills - Although statewide efforts have been initiated to emphasize competency testing of basic skills earlier in students' schooling, teachers may be concerned with existing and immediate problems dealing with basic skill remediation within their specific programs. In order to reinforce basic skills, vocational educators may be interested in examining the following materials that could be utilized in their programs to enhance basic skills as part of the vocational program. Thornton (1980) developed the Vocational Reading Series which is a series of reading strategies manuals to aid vocational teachers in identifying reading difficulty as related to students and reading materials. Each manual focuses on specific occupational areas including data processing, construction trades, health occupations, radio and television, trade and industrial, business, and home economics.

Another resource for teaching basic skills is the Secondary Mathematics Basic Skills Handbook (1979). The guide is designed to provide a framework of skills essential to a basic mathematics program. It lists basic objectives and specific resources for each skill and identifies a variety of pre-tests for diagnosing student needs.

Halprin (1984) reported on a basic skills program developed for the Ocean County Vocational-Technical School in Toms River, New Jersey. Basic skills instruction has been integrated into the vocational curriculum. A basic studies supervisor was hired to help instructors implement basic skills training within the classroom. Teachers were given in-service training or course work in strategies for teaching reading in their classroom. Reading, mathematics, science, and computer literacy components have been addressed in this effort to integrate the teaching of basic skills in the vocational curriculum.

The Lewis (1984) survey of employers reported that 90 percent of the employers agreed there was a need to increase basic skills training at the high school level. These same employers rated secondary vocational education with letter grades. Fifty-one percent of the employers graded secondary vocational education with a B or higher while 30 percent of the employers graded public schools in general with a B or higher. Nationally, 19 percent of the schools were graded with a B or higher. In general, it can be said that vocational education was graded higher than both state and national grades for public education.

Technical Skills - The Staff/Industry Exchange Project, reported by Pieratt and Wilson (1982) serves as an illustration of how vocational educators become technologically updated in Kentucky. Through this project vocational educators and industry personnel exchange jobs from one to four weeks. To implement the project, it was not required that teachers and industry personnel exchange places at the same time. The project has resulted in keeping vocational teachers up to date, increasing placement opportunities for students; influencing curriculum updating, involving industry in education; receiving industry donations; and identifying potential substitute and full-time teachers.

Industries have reported as a result of the exchanges such benefits as: better graduates, lower training costs, increased credibility of vocational programs, more technical consulting by teachers to industry, and increased articulation between schools and industry.

Corlett (1982) reported a similar concept by describing a specific program that exists between the Eastman Kodak Company and several Rochester area school districts. The project is significant in that the project was initiated by Kodak. The exchanges have lasted up to 10 and 12 weeks and are done concurrently with teachers and industry personnel exchange roles. Also, Kodak staff have recommended to educators that at least two years of math should be required for vocational students to graduate from high school and that school guidance

counselors should participate in the exchange program for increased awareness about the industrial community. Further, a Kodak representative noted that a "sound knowledge of basic machine fundamental is more important than trying to develop expertise with a specific device," (p. 46). This notion supports the recommendation to strive toward a broader base in technical skill development.

Job Attitudes - Thompson (1984) reported in a review of literature that "workers with narrow job skills may find themselves pushed out of jobs", (p. 15). However, those workers who possess positive work habits and attitudes are more able to transfer skills. Further, Beach (1981) reported that employers terminate or fail to promote workers 87 percent of the time for improper work habits and attitudes.

Gibson (1983) conducted a study and concluded that basic employment skills and work attitudes programs improve attitudes toward work, supervision, and self and, in turn, increases cognitive knowledge of jobs, job-seeking, and practical reasoning skills. With many employability skill development programs existing, vocational teachers can easily access employability skill development programs which include units for developing appropriate job attitudes.

Employability skill development programs must be developed as part of the related theory portion of each curriculum. The Illinois State Board of Education (1978) sponsored A Curriculum Guide for Pre-Employment Skills that offers a complete program for teaching pre-employment job seeking skills that can be implemented in the secondary school. It contains 15 units on job search methods and job survival skills with intention of being integrated into regular vocational courses. Subjects covered in the units include an introduction to the course of study, sources of employment, data sheets and resumes, initial contact with employers, application forms, employment tests, job interviews, rejection shock, being hired, job survival, advancement, termination, equal opportunity, and evaluation.

Another program, Exhibit Positive Work Attitudes, Work Maturity Skills was developed by Lankard (1981) at the Ohio State University. The skills fostered in this program are those skills necessary to find and keep a job with a focus on exhibiting positive work attitudes. The units in this project address using basic social skills, being creative and willing to learn, and taking pride in one's work.

Recommendation 2

Vocational educators should review priority goals, as identified by employers, to determine policy implications for all groups including the Pennsylvania Department of Education, teacher education institutions, postsecondary vocational educators, secondary vocational educators, parents, students and other significant groups.

RECOMMENDATION MATRIX

	Basic Skills	Technical Skills	Job Attitudes
Bureau of Vocational and Adult Education, Pennsylvania Department of Education			
Vocational Education Teacher Educators			
Postsecondary Vocational Educators			
Secondary Vocational Educators			
Other			

Recommendation 3

Vocational educators should be encouraged to support and promote meaningful collaboration between industry and education. Although advisory committees have been in place for quite some time, there was concern from some employers that advisory committees were not utilized effectively. While some advisory committees have been exceptional in terms of their impact on individual school efforts, more utilization of industry input should be fostered.

Employers appear to be willing to be active participants in the development of vocational programming. Employers spoke of sharing equipment, time, and a variety of resources to enhance vocational programs. One employer suggested that vocational educators should be brokers for identifying a wealth of resources available within the community. Lewis (1984) reported in an employer survey that 64 percent of the employers contacted would be willing to provide work experience for vocational teachers in order to maintain up-to-date skills. Forty-five percent of the employers would be willing to allow employees to be released from work to teach vocational education courses. These figures demonstrate a willingness on the part of the employers to be actively involved in the process of vocational education.

SUMMARY AND CONCLUSIONS

Summary

The goals and directions of vocational education were prioritized by a random sample of industry representatives who gathered in one of four sites in Pennsylvania. The employers were asked to offer opinions on three basic questions that were identified as priority issues in improving vocational education programming in Pennsylvania.

The three major questions focused on basic skills, technical skills, and job attitudes and how they can be improved through vocational programming. The group discussions and later questionnaires were used to identify and rank priority recommmendations for improving vocational eudcation. Among all the participants, there was a highly significant level of agreement on the priority recommendations and their rankings.

The question concerning basic skills asked how can vocational educators improve the teaching of basic skills? Employers highlighted the need for reinforcement of basic skills in vocational education and that the emphasis on basic skills should occur in earlier grades. Increased basic technical skill development should also take place for the teacher. Also, increased awareness of vocational opportunities should be emphasized through guidance counselors. More public awareness, advisory council activity, and more teacher supervision were reflected in the recommendations.

The question concerning technical skills asked how can vocational educators improve the technical job skills of students? The priority recommendations emphasized the need for more technological updating of teachers to insure quality programming especially through promoting industry involvement. Also, students should have more pre-screening and pre-orientation for course selection. Further, the need for a more broad base vocational curriculum should exist at the secondary level while specialization should take place at the postsecondary level.

The third question asked how can vocational educators improve job attitudes of students? Understanding the free enterprise system was highly ranked among employers. Teacher updating including management programs to improve job attitudes was recommended. Work site

simulations and industry involvement were both considered valuable in the vocational education process. Parental involvement, guidance counselors, and youth organizations were also viewed as important aspects of program improvement when considering job attitudes.

Conclusions

The employers who participated in the meetings resoundingly expressed interest and concern in the ways and means of improving vocational education. These meetings reflected industrys' willingness to collaborate and share in the partnership for the development and improvement of vocational programming. Industry exists as a viable resource to enhance the delivery of vocational education in Pennsylvania. Their willingness and concern should be harnessed, developed, and promoted for the common good of both industry and education.

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GLOSSARY

ACHIEVEMENT TEST - A test designed to measure a person's knowledge, skills, understandings, etc., in a given field taught in school.

ADULT VOCATIONAL EDUCATION - Education designed for out-of-school youth and adults who have left or completed high school and desire to pursue a vocational education curriculum or course in preparation for entrance into the labor market or to acquire new or supplementary skills to achieve stability or advancement in their current employment. The programs are primarily part-time but may be full-time.

APTITUDE TEST - A device used to assess a combination of native and acquired abilities which are considered indicative of future performance.

AREA VOCATIONAL-TECHNICAL SCHOOLS (AVTS) - A specialized high school serving more than one school district used principally for providing vocational education.

BASIC SKILLS - Skills that are basic to the mastery of a school subject, such as addition or subtraction in mathematics.

CO-OP - A cooperative education activity is a method of providing on-the-job experiences in a vocational education curriculum. Through written arrangement between the school and employer, the student is employed and receives compensation, and also receives instruction, including required academic courses and related vocational instruction by alteration of study in school with job in any occupational field.

CORRELATION COEFFICIENTS - The mathematical expression of the relationship between two variables. If the relationship is perfectly positive the correlation coefficient will be 1.00. If there is no relationship, the coefficient will be zero. If two variables are somewhat related, the coefficients will have a value between zero and 1.00 (if the relationship is positive) or between zero and -1.00 (if negative).

COURSE - Organized subject matter comprising a series of integrated units of instruction.

CURRICULUM - A series of systematically arranged courses designed for the attainment of specific vocational goals.

EDUCATIONAL FIELD EXPERIENCE - Any planned instructional activity which places students at a learning site, other than the school building at which they are enrolled, for the purpose of obtaining educational field experience programs defined for the purposes of these regulations:

Cooperative Vocational Education - Planned instruction developed through a signed cooperative arrangement among school representatives, students, parents and employers in the community for providing students with the opportunity to alternate in-school academic and vocational instruction with entry-level paid employment in any field. The student's total occupational work experience is planned, coordinated

and supervised by the school in close cooperation with the employer. The following describes the kinds of cooperative vocational education:

The specialized fields approach includes cooperative vocational education in agriculture, business, distribution, health occupations, home economics or trade and industrial education.

The diversified occupations approach provides a heterogeneous group of students from more than one vocational education program.

Work Study Program - A program designed to provide financial aid through part-time work for vocational students outside of school hours. The student may perform work in the school system or any other public agency. Work performed will be adequately supervised and coordinated. Whenever possible, it is desirable to relate the work-study program to the educational program of the student. Generally, job placement should utilize the student's abilities, interests, and training.

Work Release Program - A program in which a student is released from school for a portion of the school day in accordance with existing federal and state law to obtain paid employment. The primary purposes of the program are to provide students with income and the values associated with being productive. The type of employment may or may not be related to any future vocational interests or prior schooling or training.

General Field Experience - Any instructional activity which places a student in a field experience program which is not primarily vocational in nature but is designed to promote the students' general educational development. The program is usually non-paid and offered to orient the participants to the nature of the community outside the school. The intent is to enhance the general social and intellectual development of students and not to provide vocational training for them. Such programs may vary greatly, but all share the common interest of facilitating the general learning objectives of the school as distinguished from its vocational objectives. (See Chapter 5 - General Curriculum Requirements)

GUIDELINE - A suggested way to meet or exceed a minimum program standard. A guideline is not a mandate.

JOB ATTITUDES - The way one views work or ones feelings or state of mind towards work.

MODIFIED DELPHI TECHNIQUE - Method for achieving consensus among group members with a carefully designed program of sequential questionnaires with information and feedback.

MODIFIED NOMINAL GROUP TECHNIQUE - Method for facilitating and gathering small group committee responses.

ON-THE-JOB TRAINING (OJT) - Supervision and other supplemental instruction furnished to a learner while employed as a beginner or trainee in the regular duties of a position or job.

PEDAGOGY - The art, practice, or profession of teaching.

POSTSECONDARY VOCATIONAL EDUCATION - Education designed primarily for youth or adults who have completed high school and are available to pursue a full-time, one-or-two-year preparatory curriculum in preparation for entering employment.

PROGRAM - The vocational education curriculum through which pupils are prepared to enter an occupational field.

RANDOM SAMPLE - A sample selected in such a way as to guarantee equal probability of selection to all possible samples of this size that could be formed from the members of the universe involved.

REGULATION - Approved by the State Board for Vocational Education, establishes the general directions, rule and governing principle.

REMEDIATION - Special instruction intended to overcome in part, or in whole, any particular deficiency of a pupil not due to inferior general ability, for example, remedial reading instruction for pupils with reading difficulties.

SECONDARY - A vocational education program offered in pubic secondary schools, intermediate units and correctional institutions to students in grades 9 through 12 (including upgraded students in the age bracket of grades 9 through 12).

STANDARD - Approved by the Secretary of Education, provides the minimum requrement for program approval and the criterion to measure the quality of a program. A standard is based on the provision of a Regulation, School Law and the best judgment of the vocational bureau staff regarding each element to be present in a vocational education program.

STATE AND STANDARD METROPOLITAN STATISTICAL AREAS (SMSA's) - Sixteen regional areas in Pennsylvania used by the Department of Labor and Industry.

TECHNICAL SKILLS - Specific skills and competencies relating to individual occupational requirements.

VOCATIONAL EDUCATION - Programs under public supervision and control which provide organized learning experiences designed to develop skills, knowledge, attitudes and work habits in order to prepare individuals for entrance into and progress within various levels of employment in occupational fields including agriculture, business, distribution, health, occupational and useful home economics, trades and industry and an alternative recognized program known as diversified occupations. More specifically:

Agriculture Education - Education designed to prepare an individaul to enter or advance in production agriculture, products processing, agribusiness, renewable natural resources, agricultural mechanics, horticulture and environmental occupations.

Business Education - Education designed to prepare an individual to enter or advance in an occupational field wherein success is largely dependent upon skills, knowledge, attitudes, work habits and leadership development necessary to demonstrate competency in accounting, clerical, data processing, secretarial occupations and similar business pursuits.

Health Occupations Education - Prepares idividuals with entry-level skills through a program of basic related subjects, principles, concepts and a common core of knowledge for a variety of occupations to render the person employable in settings that are concerned with providing diagnostic, therapeutic, preventive, restorative and rehabilitative services to people. The educational program provides vocational and technical training for in-school youth and out-of-school adults through a cooperative arrangement with the health care providers.

Home Economics Education - The total program of offerings which is composed of one or both types of instructional programs--Consumer and Homemaking Education and Occupational Home Economics Education. Both programs use the knowledge, skills and attitudes in the subject matter areas of home economics. These areas include: foods and nutrition, clothing and textiles, housing and home furnishings, human development including child care and development, parenthood education and family living, home management and family resources.

Consumer and Homemaking Education - The instructional program which prepares persons at the high school and adult educational levels for homemaking.

Occupational Home Economics Education - The instructional program which prepares persons at the high school and adult educational levels for paid employment.

Marketing and Distributive Education - Education designed to meet the needs of persons preparing to enter or retrain for an occupation requiring competency in one or more of the functions of marketing and distribution and/or knowledge of products and services.

Trade and Industrial Education - Education designed to develop manupulative skills and leadership abilities, acquire technical knowledge and related occupational information for preparing individuals for initial employment or upgrading or retraining out-of-school youth and adult workers in the service, manufacturing, trade and industrial occupations.

Technical Education - A vocational education program designed to prepare an individual to enter or advance in an occupational field requiring use of technical skills or laboratory techniques the practice of which involves application of scientific principals,supporting mathematics, management principals and technical information.

VOCATIONAL STUDENT ORGANIZATION - An integral part of each vocational program utilized to develop leadership competencies and positive attitudes toward fulfilling occupational, civic, social and community responsibilities.

APPENDIX A

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF EDUCATION
333 MARKET STREET
P. O. BOX 911
HARRISBURG, PA 17108

January 13, 1984

_____
_____
_____
_____

Dear _____:

The Pennsylvania Department of Education, in cooperation with The Pennsylvania State University, is very interested in seeking your views on some important issues facing vocational education in Pennsylvania.

We would like to meet with you along with other employers in the area to discuss in a structured meeting your views concerning the future direction of public secondary and postsecondary vocational education in the Commonwealth. The meeting will be held at the following location on February 27, 1984 from 2:30 to 5:00 p.m.

Met-Ed
2800 Pottsville Pike (Route 61)
Reading, PA 19605

Enclosed are a registration form, directions to the Met-Ed Building and an agenda for the meeting. Please send your registration form to me in the envelope provided before February 1, 1984. If you have any questions about the meeting, you may call me at (717) 787-6675.

Sincerely,

James P. Lewis
Research Associate
Research Coordinating Unit

JPL/mh9082c

Enclosures

EVERY SCHOOL A GOOD SCHOOL

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF EDUCATION
333 MARKET STREET
Registration Form
HARRISBURG, PA 17108

If you or a representative from your firm is planning to attend the employer meeting, please complete the following:

Name of Person Attending the Meeting _____

Title _____

Address _____

Phone _____

Please return the registration form in the return mailer.

JPL/cs957

EVERY SCHOOL A GOOD SCHOOL

APPENDIX B

Agenda

Employers from the Reading Labor Market Area

Location: Met-Ed
2800 Pottsville Pike (Route 61)
Reading, PA

Date: February 27, 1984 from 2:30 to 5:00 p.m.

Facilitators:

Mr. James P. Lewis — Pennsylvania Department of Education

Dr. William Williams — The Pennsylvania State University

Time	Topic
2:30 - 2:45	Introductions
2:45 - 3:45	Three Small Group Meetings
3:45 - 4:00	Coffee Break
4:00 - 5:00	General Meeting (All Groups)

SOLICITING INDUSTRY'S OPINIONS FOR IMPROVING VOCATIONAL EDUCATION

Questions to be addressed:

1. How can vocational educators improve the teaching of basic skills?

   Consider:

   a. What basic skills should be taught?
   b. Methods of delivering basic skills to vocational students.
   c. Vocational student guidance.
   d. Teacher (staff) development.

2. How can vocational educators improve the technical job skills of students?

   Consider:

   a. What job skills should be taught?
   b. Methods of delivering vocational skills to vocational students.
   c. Vocational student guidance.
   d. Teacher (staff) development.

3. How can vocational educators improve job attitude of students?

   Consider:

   a. Reliability
   b. Trustworthiness
   c. Loyalty
   d. Perseverance
   e. Interpersonal relations
   f. Safety attitudes
   g. Productivity

APPENDIX C

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF EDUCATION
333 MARKET STREET
P. O. BOX 911
HARRISBURG, PA 17108

Please use this sheet to write additional comments or reactions on the topics discussed today. If you wish you may make your comments at a later time and send them to me in the pre-addressed mailer. Thank you again for your cooperation.

EVERY SCHOOL A GOOD SCHOOL

Koppers Company, Inc., Research Department
440 College Park Drive, Monroeville, PA 15146
Telephone 412-327-3000

MAR 16 1984

KOPPERS

March 8, 1984

Commonwealth of Pennsylvania
Department of Education
3333 Market Street
P.O. Box 911
Harrisburg, PA 17108

Attention: Mr. Lewis

Dear Mr. Lewis:

I would like to thank you for inviting me to be a part of your meeting on vocational education. I found it to be a very worthwhile experience to learn about some of the problems pertaining to this type of education and to hear the viewpoints of other companies.

We at Koppers Co. are very much interested in vocational education since we recruit vocational school graduates. Employees with this background have a decided advantage over those without formal training.

Please consider me for any future meetings on the subject. Perhaps a visit to our Centers at Monroeville and Verona could be helpful in improving the curriculum.

Sincerely,

C. Michael Meyer

C. Michael Meyer
Facilities Engineer

CMM:wjv

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF EDUCATION
333 MARKET STREET
P. O. BOX 911
HARRISBURG, PA 17108

Please use this sheet to write additional comments or reactions on the topics discussed today. If you wish you may make your comments at a later time and send them to me in the pre-addressed mailer. Thank you again for your cooperation.

I was pleased and highly honored to have received an invitation to participate and offer some personal input into the State's effort to improve the quality and benefits of the educational process as it relates to our youth, which in reality represents the true wealth of our nation both present and future.

First of all I am compelled to compliment the entire staff of facilitators at the February 29th meeting for their apparent dedication and sincerity and also their willingness to have their ears to the ground. They were receptive both to criticism of existing systems and techniques as well as graciously accepting recommendations and suggestions for improvement, all without expressing any rebuttal or ignoring the ideas of we who are on the outside, yet beneficiaries, of the educational process.

I feel that first and foremost our responsibility as adult citizens of this state and our country is to help each student find his or her niche in life in order to reach his or her fulfillment and in turn be a benefit to humanity in general. I believe that our youth should be screened and evaluated and then placed in classrooms or groups where they would have similar goals, qualifications and potential rather than in age groups formed from certain areas of a community.

At this meeting it was very apparent that for the most part we, somewhat selfish leaders, were expecting the schools to produce a human product that would be more beneficial to us and in turn improve our position and wealth in the open market place. However, I feel quite differently, for if our youth were encouraged and educated in areas where they appeared to be more qualified, more at ease, happier and where they had a sense of fulfillment, the end product would be far superior and more acceptable to industry and future community leaders as a whole. In this light they, without doubt, would have far better attitudes and greater dedication for what in many instances would be their life's calling and the means of their livelihood. Although this is quite a different approach from past methods of education, I

feel that it bears a great deal of consideration if we truly are interested in our young americans.

I also would like to commend the educational department of this great state of Pennsylvania for recognizing some of the pitfalls of our educational process and their willingness to listen to the voice of the people. In my book, that is Democracy in Action.

May God bless you in your efforts.

Sincerely,

Percy Love

Percy Love

APPENDIX D

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF EDUCATION
333 MARKET STREET
P. O. BOX 911
HARRISBURG, PA 17108

March 23, 1984

Dear

Thank you for attending the Pennsylvania Department of Education's meeting "Soliciting Industry's Opinions for Improving Vocational Education." Your comments are currently being summarized for our final report.

In order to finalize the information you provided, we need to have you rank the opinions that were generated from the meetings that were held at the other locations. Please indicate your ranking of that opinion on the enclosed form.

We are looking forward to hearing from you as soon as possible. Our final report will be dependent on your input. Once the report is complete, a copy will be sent to you.

Sincerely,

James P. Lewis
Research Associate
Research Coordinating Unit

JPL/tt4033

Enclosure

OPINIONS FOR IMPROVING VOCATIONAL EDUCATION

NAME: _____ FIRM: _____

Directions:

1. Please indicate the small group question you participated in.

   _____ How can vocational educators improve the teaching of basic skills?

   _____ How can vocational educators improve the technical job skills of students?

   _____ How can vocational educators improve job attitudes of students?

2. On the attached pages, rank the opinions collected for each of the questions discussed at the regional meetings.

3. The most important opinion should receive a ranking of 1, the second most important should receive a ranking of 2, etc. Please give each opinion a rank.

4. Return the form in the enclosed mailer as soon as possible.

Question 1.

THE PENNSYLVANIA STATE UNIVERSITY
102 ARMSBY BUILDING
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Agriculture
Department of Agricultural and
Extension Education

Department Head 814-865-1688
General Offices 814-863-0443
Extension 814-863-0387

Basic Skills

Attached are 11 concerns which were brought out by industrial leaders as they were asked how vocational educators might improve the teaching of basic skills. We would like for you to read each statement completely and then go back and rank them with regard to their importance in helping to improve basic skills education in our Pennsylvania schools. Please place a number one (1) beside the concern which is, in your opinion, the most important thing educators can do to improve the teaching of basic skills. Place a two (2) beside the second most important concern, and so on, until you have ranked all eleven.

Rank

____ Basic skills need to be emphasized earlier in the students' schooling. The role of vocational education should be the reinforcement of the basic skills of reading, writing, and math, which were taught in earlier grades.

____ Remediation programs for basic skills development need to be designed into the curriculum prior to entry into vocational education programs.

____ Aptitude and achievement tests should be used periodically throughout the students' schooling to identify needs for remediation earlier.

____ Guidance counselors need to increase efforts in delivering vocational awareness programs. More highly qualified students must be encouraged into vocational programs.

____ Vocational teachers must continually upgrade their own basic "technical" skills. Closer cooperation with industry through summer intern programs, and technical updating workshops will greatly aid teachers in their efforts to keep their courses up to date with the industry.

____ Public awareness programs (directed toward parents) should be developed to explain the needs of today's workers and how they have changed over a generation. These public awareness programs must promote the idea that vocational students are not "second class" students. (The need for competent vocational school graduates is actually greater than that of the college graduate.)

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Basic Skills 2

Rank

____ Teachers need to be supervised more closely at all grade levels to assure better articulation between the various sections of courses. The courses need to be designed such that nothing "falls through the cracks" as a student proceeds from one grade level to another.

____ Advisory councils should exert more influence on basic skills requirements and pay more attention to industry's recommendations.

____ Teachers and supervisors should be held accountable for student mastery of basic skills prior to entry into vocational programs just as vocational teachers and vocational supervisors should be held accountable for mastery of vocational and technical skills.

____ Development of thinking skills, problem solving techniques, and communication skills should be considered basic to every vocational program and adjustments should be made to vocational curricula to reflect their importance.

____ Vocational programs should strive toward a broader base in the area of technical skills development so as to not limit the potential employability of students. Specific technical training should be left to the employers.

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UNIVERSITY PARK, PENNSYLVANIA 16802

College of Agriculture
Department of Agricultural and
Extension Education

Department Head 814-865-1688
General Offices 814-863-0443
Extension 814-863-0387

Job Attitudes

Attached are eight concerns which were brought out by industrial leaders as they were asked how vocational educators might improve the teaching of job attitudes. We would like for you to read each statement completely and then go back and rank them with regard to their importance in helping to improve job attitudes education in our Pennsylvania schools. Please place a number one (1) beside the concern which is, in your opinion, the most important thing educators can do to improve the teaching of job attitudes. Place a two (2) beside the second most important concern, and so on, until you have ranked all eight.

Rank

____ Understand the Free Enterprise System, which includes an understanding of profit, productivity, processes and procedures essential to business and industry.

____ Teacher updating, which involves the improvement of teaching skills and compentence through utilization of industry training, work ethic and management programs to improve job attitudes.

____ Curriculum/worksite simulations, which includes the development of curriculum and educational facilities to be as similar to the work place as possible.

____ Industry involvement; the utilization of industry resources for guest speakers, fieldtrips, programs, information and guidance.

____ Job "hunting skills", which includes the procedures used to successfully seek and secure employment.

____ Parental involvement, including the development of programs for increased involvement in the education and guidance of their children as well as promoting a better understanding of vocational education.

____ Guidance, which includes improved procedures for educational and occupational guidance and placement.

____ Youth organizations, which includes the development and utilization of organizations within school programs for the promotion of leadership and job related attitudes.

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Technical Skills

Attached are seven concerns which were brought out by industrial leaders as they were asked how vocational educators might improve the teaching of technical skills. We would like for you to read each statement completely and then go back and rank them with regard to their importance in helping to improve technical skills education in our Pennsylvania schools. Please place a number one (1) beside the concern which is, in your opinion, the most important thing educators can do to improve the teaching of technical skills. Place a two (2) beside the second most important concern, and so on, until you have ranked all seven.

Rank

____ Technological updating - teachers should be required to regularly participate in technical skill development through seminars, workshops, and OJT within industry. Further, teachers should actively seek and promote industry involvement within the school in order to conduct ongoing job and trade analysis.

____ Better prepared students - students should be subject to pre-vocational orientation, entrance requirements, more guidance about vocational courses, and courses dealing with labor market trends.

____ Curriculum upgrading - the curriculum should accurately reflect local labor market needs.

____ More teacher preparation - not only should teachers be required to be technologically current, but they should also better understand the methods for delivering vocational education. There should be an emphasis on teachers as "brokers" of information and resources.

____ Emphasize basic technical skills and secondary level, emphasize specialization at the postsecondary level - the secondary vocational curriculum should develop basic technical skills rather than a high degree of specialization. Specialization should be fostered at the postsecondary level. Basic reading and math skills should be reinforced as technical skills.

____ Development of leadership skills - students should understand the processes of advancement, high standards, team work on the job, and the need for lifelong learning.

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Technical Skills 2

Rank

____ Computer literacy skills - minimally, students and teachers should understand the empact of computers on their occupational area. They should at least be aware of the types of computers used in their trade area.

APPENDIX E

EMPLOYER MEETINGS

Labor Market Area: Reading

Location: Met-Ed, 2800 Pottsville Pike, Reading, PA

Host: Dr. Gary Wright, Director of Training, Met-Ed

Date and Time: Monday, February 27, 1984--2:30 - 5:00 p. m.

Participants: (N = 33)

Name	Title	Firm
Harry E. Nelson, Jr.	Manager for Manufacturing	Arrow International, Inc.
Ann M. Brinsko	Manager, Administration	CTCE Federal Credit Union
Barry H. Miller	Secretary/Treasurer	DeMill Contracting
John Shimp	Director, Human Resources	East Penn Mfg.
Joseph L. Aiman, Jr.	Data Processing Manager	Singer Equipment Co.
Lynn Harter	Office Manager	Essick & Barr, Inc.
John A. DeMartini	Vice President	Windsor Service, Inc.
Gary M. Beaver	President	Standard Offset Printing
Grace Davies	Manager	Grace's Golden Comb
Ann Huck	Coordinator	Lullaby Day Nursery
Marcelle Gano	Coordinator	Lullaby Day Nursery
Ellie Antoine	Vice President	Advanced Computer Services
Heather E. Carbon	Personnel Manager	Boscov's Department Store
Larry P. Shoe	Director, Human Resources	Polymer Corp.
Edward J. Bricker	Personnel Director	Hoffmann Industries, Inc.
Elenora Gowans	Manager	Ruttenberg Travel Service
Paul Springer	Manager	Big A Auto Parts
Karen J. Musket	Word Processing Manager	Gilbert Associates

Richard G. Hill	Personnel Manager	Sharpoint, Inc.
Robert Montgomery	Manager, Design and Drafting	Sharpoint, Inc.
Thomas M. Hartman	Manager, Human Resources	PA Steel & Foundry
Scott R. Parks	Manager, Technical Training	Carpenter Technology Corp.
Thomas F. Green	General Manager	Parish Div., Dana Corp.
Ronald Dunkelberger	Plant Operations Manager	Maier's Bakery
Joan M. Zuber	Manager	Zuber, Close & Ross
Ben Koch	Owner	Kawasaki/Honda of Berks
Shirley Focht	Data Entry Supervisor	Security of America Life Insurance
Bernice Kauffman	Director of Nurses	Leader Nursing Center
Arlene S. Postupak	Manager	Leader Nursing Center
Harold O. Leinbach	Manager	Bob White Frozen Foods
Lawson Booker	Director of Personnel	Glen-Gery Corp.
Jerry T. Southworth	Training Coordinator	Berk-Tek, Inc.
Gary Wright	Director of Training	Met-Ed

Labor Market Area:	Allentown, Bethlehem, Easton
Location:	UGI Building, 2121 City Line Road, Bethlehem, PA
Host:	Mr. Jack Heiney, UGI Corp.
Date and Time:	Tuesday, February 28, 1984--8:00 - 10:30 a. m.
Participants:	(N = 15)

Name	Title	Firm
Kris Groller	Personnel Specialist	Binney & Smith, Inc.
William A. Smelas	Director of Manufacturing	New Jersey Zinc Co., Inc.
Wayne Sharp	Manager, Human Resources	Mack Printing Co.
Lawrence W. O'Neill	President	Victor Balata Belting
Arthur Tarolo	Vice President	Lehigh Litho, Inc.
Ronald L. Golumbeck	Industrial Relations Manager	Stroh Brewery
Joseph J. Hilton	Vice President	ITT Electron Tube Division
Becky DeMott	Dept. Chief, Training and Public Relations	AT&T Technologies
Edward E. Starniri	Purchasing Agent	Ashland Chemical Co.
Sally Sheehan	Manager, Employee Development and Equal Employment Opportunity	Fuller Co.
Greg Gulick	President	Key Pontiac-Datsun
Donna Haggerty	Director, Educational Services	Call Chronicle Newspaper
Melanie Barth	Food Service Manager	Westminister Village Life Care Community
Armin Geist	Plant Manager	Rexroth Corp.
William L. Buss	Manager, Human Resources	Victaulic Co. of America

Labor Market Area:	Northeast
Location:	Pomeroy's Department Store, Wyoming Valley Mall, Wilkes-Barre, PA
Hostess:	Ms. Carol Skrzysowski, Personnel Specialist, Pomeroy's Department Store
Date and Time:	Wednesday, February 29, 1984--9:30 a. m. - 12:00 noon
Participants:	(N = 26)

Name	Title	Firm
Joseph C. Scagliotti	Manager, Employee Relations	RCA Corp.
Jay Barrett	Personnel Manager	Jewelcor
John C. Shank	Industrial Relations Director	Owens-Illinois, Inc.
Margaret B. Guffrovich	Manager	Owens-Illinois, Inc.
Joseph Foote	Director, Manufacturing Operations	Anemostat
Ed Chlebowski	Operations/Marketing Manager	National Standard Metal Co.
Millie Vasil	Vice President	Continental Data Processing Co.
Marvin Kline	Supervisor	ACME Metal Products
Mike Peterson	Personnel Manager	McGraw-Edison Power Systems
Bert Falk	Director, Human Resources	Topps Chewing Gum, Inc.
Robert E. Rice	Personnel Director	Hughes Printing Co.
Michael J. Smith	Plant Manager	Enrico Bartolini Designs, Inc.
James R. Miller	Assistant to Executive Vice President	Gentex Corp.
Ernest Stauffer	Personnel Manager	Barrett Haentjens & Co.
Joan M. Lugoski	Assistant Cashier	First Eastern Bank
Anthony J. Dombroski	Executive Director	American Red Cross Blood Service
Ronald B. Wolfe	Manager	Giant Market

Stewart J. Girlock	Owner	Girlock's Commercial Refrigeration
Percy Love	Consultant	Love's Thermal Systems, Inc.
Paul A. Kielar	President	Delbendix, Inc.
George Elias	Manager	Revco Drug Store
David A. Choman	Director, Data Processing	Markdata, Inc.
Linda A. Giordano	Director of Personnel	Markdata, Inc.
Edward Tetlak	Owner	Double "D" Restaurant
Jerry Gazinski	Plant Manager	Offset Paperback Mfgs., Inc.
James M. Escarge	Supervisor	Wilkes-Barre AVTS

Labor Market Area:	Pittsburgh
Location:	Building Industry Center, 2270 Noblestown Road, Pittsburgh, PA
Host:	Mr. Robert McCall, Assistant Executive Director, Construction Advancement Program of Western PA
Date and Time:	Tuesday, March 6, 1984--8:00 - 10:30 a. m.
Participants:	(N = 34)

Name	Title	Firm
Peter Duffy	Manager	Armco, Inc.
David F. Kapsha	Manager, Industrial Relations	Mackintosh-Hemphill Mfg.
James Linton	Coordinator, Buildings and Grounds	North Allegheny S. D.
Don Battenbrug	Assistant Academic Dean	Community College of Allegheny County
John S. Walsh	Cake Department Manager	Bethel Bakery
Wayne R. Maue	Director, Data Processing	Blue Cross of Western PA
Linda J. Venneri	Styles Director	Kaufman's Department Store
John Davis	Director, Physical Plant	Duquesne University
Matthew R. Borcik	Engineering Supervisor	Anderson Engineers, Inc.
Donald C. Wolbert	Owner	47 E. Crafton, PA
James Kelesar	Electronics Instructor	Connelly Skill Center
William A. Frankland	Manager, Industrial Relations	Babcock & Wilcox Co.
A. Ronald Schollaeret	Manager	Babcock & Wilcox Co.
David H. Dudt	Owner	John Dudt Bakery
Holly Acker	Personnel Representative	Union National Bank
David Wolfe	District Manager, Data Processing	Bell Telephone Pittsburgh, PA
M. R. Audley	President	Detail Drafting, Inc.
Bob Bitz	Owner	Bitz TV
Varn L. Hamlin, Jr.	President	Hamlin's

David M. Cannon	Field Representative	Constructors Association of Western PA
Ralph A. DeCostro	Employee Relations Representative	Westeringhouse Air Brake Div.
John Hayden	Coordinator, Human Resources	Wean United, Inc.
Michael P. Ballas	Personnel Manager	MSA, Murrysville, PA
J. R. McCall	Quality Assurance Manager	Mobil Chemical Co.
Robert W. Weary	Director, Human Resources	Knouse Foods Co-op, Inc.
James J. Robinson	Job Developer	Bidwell, Inc.
Suzanne Garcia	Job Developer	Bidwell, Inc.
Frank A. Romano	Owner	BIANC Printing
John R. Rombick	Director of Engineering	Electromedia, Inc.
Joseph L. Mozziotti	Vice President	Jackson Welding Supply Co.
Harry Fine	Personnel Manager	Marriott Inn
Charles S. Komorosky	Assistant Vice President	Equibank
Mike Moyer	Manager	Koppers Science & Technology
Robert McCall	Assistant Executive Director	Construction Advancement Program of Western PA

APPENDIX F

Center Update

PSU

Vocational Teacher Education
Professional Personnel Development

Vol. 5 No. 2 Spring 1984

Center Service Activities

Industry's Opinions for Improving Vocational Education Cited

A recent project entitled "The Study of Employers' Views on Critical Issues Facing Vocational Education in Pennsylvania," focused on soliciting industry's opinions for improving vocational education in the state. The project, directed by William Williams, associate professor of agricultural and extension education, and James Lewis, research consultant, Bureau of Vocational Education, Pennsylvania Department of Education, randomly selected four groups of representatives from business and industry in the Reading, Bethlehem, Wilkes-Barre, and Pittsburgh areas.

Interviewers used a nominal group technique to elicit individual opinions for improving vocational education. Participating as group leaders were Connie Baggett, assistant professor; Randall Waters and Kerry O'Dell, graduate assistants, agricultural and extension education; and Barbara K. Wade, instructor, vocational-industrial education.

Three major categories of questions were addressed:

— How can vocational educators improve the teaching of basic skills?
  a. What basic skills should be taught?
  b. Methods of delivering basic skills.
  c. Vocational student guidance.
  d. Teacher (staff) development.
— How can vocational educators improve the technical job skills of students?
  a. What job skills should be taught?
  b. Methods of delivering technical job skills.
  c. Vocational student guidance.
  d. Teacher (staff) development.
— How can vocational educators improve job attitude of students?
  a. Reliability
  b. Trustworthiness
  c. Loyalty
  d. Perseverance
  e. Interpersonal relations
  f. Safety attitudes

A number of concerns were identified as common to all of the groups interviewed. At present, employers are being contacted again to rank those concerns. Three of the twenty-six concerns noted by the groups are that:

— Students need to understand the free enterprise system as related to the profit, productivity, processes, and procedures essential to business and industry.
— Teachers need regular technological updating through seminars, workshops, and O.J.T. within industry.
— Basic skills need to be emphasized *earlier* in students' schooling. The role of vocational education should be the *reinforcement* of basic skills of reading, writing, and math taught in the earlier grades.

All of the concerns will be listed in a final report, available by the end of June. For additional information, contact Dr. William Williams, 110 Armsby Building, University Park, Pennsylvania 16802.

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Pennsylvania Education
MARCH 19, 1984 • VOL. 15 NO. 5

PDE seeking employer views

The Pennsylvania Department of Education is going right to the source--employers themselves--to get information on how vocational education in Pennsylvania might better serve the interests of business and industry as well as students. In late February and early March, the PDE sponsored two studies--one in the form of meetings involving employers and the other in the form of a written questionnaire--to get employer views on vocational issues.

The first study involved employers in each of four labor market areas in Pennsylvania: Reading, Bethlehem, Wilkes-Barre and Pittsburgh. The employers, meeting in groups of about 30 at each site, were asked to discuss three specific issues in vocational education: what vocational education can do to improve the basic skills of students, what vocational education can do to improve the technical skills of students, and what vocational education can do to improve student attitudes toward work.

The second study, which will be conducted through a survey form developed by the Department of Education, will involve 3,500 other employers in Pennsylvania. This study will address three broad issues: employers' opinions of vocational education, how employers might work cooperatively with secondary and postsecondary vocational education, and what employers think vocational education should be doing to best prepare students for work.

Dr. Jerry Olson, director of vocational education for the Department of Education, says the results of the two surveys will be useful in economic development planning and vocational program improvements.

Try harder

Employers relate to state what they expect of job applicants

By Eleanor Chute

The Pittsburgh Press 3/7/84

John Romick recalls the job applicant he couldn't hire even though he had a beautiful resume.

The problem was the applicant forgot to include his address and phone number, said the director of engineering at Electromedia.

That's one of the problems employers face when students aren't prepared for the job market.

Thirty-one Pittsburgh area employers met yesterday to let the state Bureau of Vocational Education know how they believevocational education can be improved.

The session, one of four throughout the state, came about the same time as the release of a followup study of some students who completed programs at a sampling of area vocational-technical schools from 1976 to 1980.

That study showed more of former vocational education students were employed than others in their age group. Their unemployment rate was 12.9 percent, about a fourth less than the 16.2 percent unemployment rate in their age group in 1532.

About three-fourths of the 2,669 former students who were surveyed rated their high school vocational education programs good to excellent, and nearly two-thirds thought they were better prepared than other students.

The former students recommended that the vocational programs include more practical job placement, more cooperative work arrangements and better counseling. A few suggested an increased emphasis on basic skills such as reading, writing and speaking.

While some of the employers gave similar suggestions, they also gave a heavier emphasis on the need for basic skills. Some gave higher marks to the vocational education program than to the regular educational program which is supposed to include the basic skills.

One quality assurance manager for a chemical firm told of employees who couldn't do simple math.

"It's pretty hard to believe that the mastery of simple, basic arithmetic is at a low level," he said. "I've seen people let go (because they couldn't do math). It's OK to get 70 percent on a test (in school), but if you screw up 30 percent of the time in industry, it's too wasteful."

Connie Baggett, an assistant professor at Pennsylvania State University who led a discussion group, cited an example in which an employee said 2,000 pounds plus 200 pounds equaled 4,000 pounds, not 2,200.

He suggested math courses should deal directly with math in auto mechanics and other fields, not just with Johnny had 12 apples and ate one. He also said students are becoming too dependent on hand-held calculators.

Harry Fine, personnel manager of the Marriott in Green Tree, said schools should teach students how to apply for a job. Some come in poorly groomed, willing to work only daylight hours on weekdays and have little idea of how they could help.

Linda Venneri, styles director for the beauty salon at Kaufmann's department store, said some have trouble relating to the world of work. "They think they're masters when they get out (of school)."

Ms. Venneri said more cooperative programs — in which students learn on the job — are needed to give students a realistic view of work.

(Eleanor Chute is Press education writer.)

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